Habitat Inventory and Assessment of Juanita Creek in 2000

April 2002

CITY OF KIRKLAND WASHINGTON

King County

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Report to:

City of Kirkland

King County Department of Natural Resources and Parks
Water and Land Resources Division

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KING COUNTY

SUMMARY

Declining stocks of native salmon, increasing urbanization, and the listing of the Puget Sound chinook evolutionarily significant unit (ESU) as threatened under the Endangered Species Act have intensified interest in assessing instream habitat conditions in the City of Kirkland and King County streams. Little current information about the habitat condition of Juanita Creek was available. The King Conservation District provided funding to Kirkland and King County to complete this assessment.

In August of 2000, habitat on Juanita Creek was assessed using methods derived from standard assessment protocols. The goals of the habitat assessment project for Juanita Creek were threefold: (1) characterize instream and riparian habitat quality–primarily for salmonids; (2) establish a baseline for future evaluation of trends in habitat quality and watershed function; and (3) provide information for process of prioritizing areas for restoration and preservation. Stream segments were defined by using the Salmon and Steelhead Habitat Inventory and Assessment Program (SSHIAP) stream segment delineation, which is based on stream gradient and confinement categories.

The results of the habitat assessments indicate that channel and habitat structure of a number of the segments of Juanita Creek are degraded relative to values from published "properly functioning conditions" for the Puget Sound or the Pacific Northwest region. For example, riparian vegetation quality and large woody debris (LWD) frequencies are below the prescribed properly functioning or natural conditions in all segments. Pools are of low quality in most segments. This decreased quality of slow water rearing habitat may limit juvenile carrying capacity as well as hinder upstream migration by adult salmon.

These data suggest that processes creating natural habitat structure are likely to be altered from natural conditions. Previous analysis of basin land cover reveals little forested cover remaining and high percentages of impervious surfaces, which are changes that have been shown to alter the basin hydrologic regime. These increases in the rate at which stormwater runoff enters the stream increases erosion rates and lead to destabilization of channel morphology. Riparian vegetation seldom resembled natural conditions and was nearly completely depleted of sources of high quality, coniferous LWD. Dominant riparian vegetation included ornamental trees and shrubs and lawns associated with landscaping, native shrubs, and deciduous forest. As a result, LWD frequencies were low in most segments of Juanita Creek. The low amounts of instream LWD are likely responsible for the low pool frequency.

Data collected during assessment of Juanita Creek provide important baseline information for monitoring changes in habitat quality, and for any restoration projects that might occur in the basins. Data contained herein may be used for an analysis of factors that may be limiting productivity of salmonid species in this basin. The collected data may also be analyzed at a finer spatial scale to inform project planning at more localized sites or among basins for regional project planning. Land use planning, transportation planning, and stormwater management planning in these basins may also benefit from these data. Water Resource Inventory Area 8 (WRIA 8, Lake Washington Area) reconnaissance assessments and watershed planning for salmonid species recovery have utilized these data and will likely continue to do so.